Service Manual

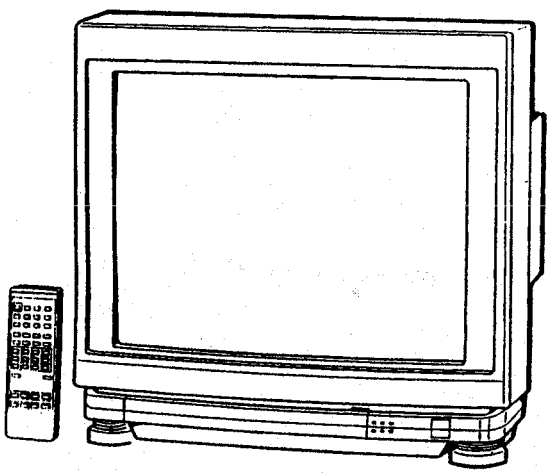
COLOR TELEVISION RECEIVER

PAL / SECAM

KabelTV

ORION

COLOR 5588 VT
COLOR 553



MFR'S Version:

MFR'S VERSION A

Bestell-Nr.:

3771

CONTENTS

	PAGE
SPECIFICATIONS	1
MAJOR CONPONENTS LOCATION GUIDE	2
ALIGNMENT INSTRUCTIONS	3 , 4
BLOCK DIAGRAMS	5 , 6
MAIN P.C.BOARD	7
CRT/POWER/CONTROL/LED/HEADPHONE JACK/POWER SWITCH/T'TEXT P.C.BOARDS	8
CHASSIS SCHEMATIC DIAGRAMS	9~13
MECHANICAL EXPLODED VIEW	14
MECHANICAL REPLACEMENT PARTS LIST	15
ELECTRICAL REPLACEMENT PARTS LIST	16~18
INTERCHANGEABLE PARTS LIST	19

SPECIFICATIONS

PICTURE SIZE		21 inch
SYSTEM		PAL/SECAM
FREQUENCY RANGE	VHF(L)	2 - 4, X - S2 ch, 47 - 118 MHz
	VHF(H)	S3 - S10, 5 - 12, S11 - S20 ch 118 - 300 MHz
	UHF	21 - 69 ch, 470 - 862 MHz
MAXIMUM SENSITIVITY	VHF	20 dB
	UHF	25 dB
INTERMEDIATE FREQUENCY:		
Picture IF Carrier Frequency		38.9 MHz
Color Sub Carrier Frequency		34.47 MHz
Sound IF Carrier Frequency		33.4 MHz
SOUND INTERMEDIATE FREQUENCY		5.5 MHz
MAXIMUM OUTPUT POWER		5.0 W
10% THD OUTPUT POWER		4.0 W
SPEAKER		4 ohm
POWER SOURCE		AC 220V

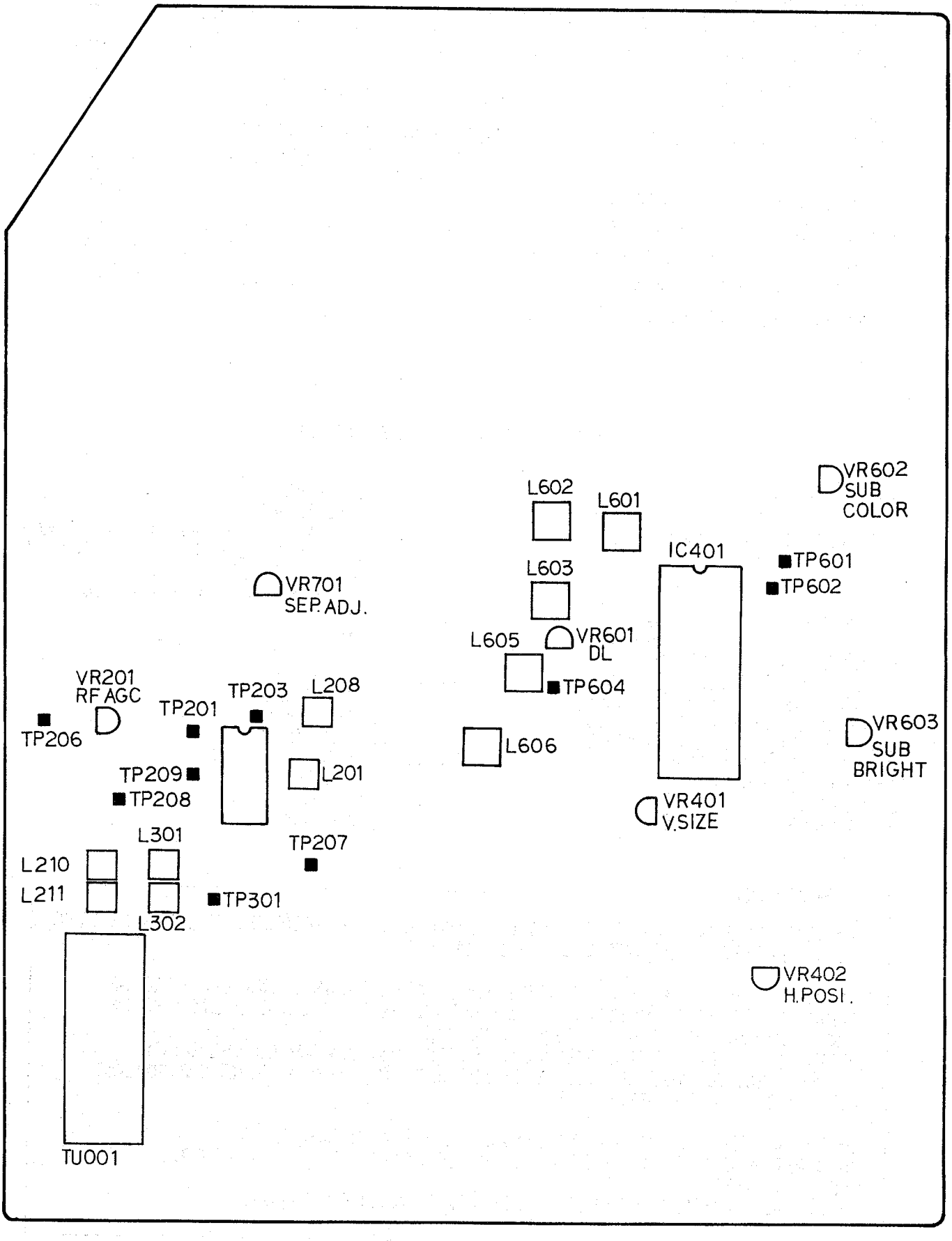
IMPORTANT

*FOR SERVICE WORK ALWAYS USE MAINS ISOLATING TRANSFORMER, CHASSIS IS LIVE. (IRRESPECTIVE OF POLARITY OF MAINS PLUG.)

*IN CASE OF REMOVING PCB OR SOMETHING, AFTER UNFASTENING THE WIRE OR CHANGING THE WIRE POSITION, IT IS IMPORTANT TO PUT THE FASTENING OF WIRE AND THE POSITION OF WIRE AS IT WAS.
BECAUSE, PICTURE DISTORTION OR SOMETHING MAY APPEAR ON THE DISPLAY.
SO, BE SURE TO CONFIRM THE FASTENING AND POSITION OF WIRE BEFOREHAND.
THEN START TO THE OPERATION.

*INFERIOR SILICON GREASE CAN DAMAGE IC's AND TRANSISTORS.
WHEN REPLACING AN IC OR TRANSISTOR, USE ONLY SPECIFIED SILICON GREASE (YG6260).
REMOVE ALL THE OLD SILICON BEFORE APPLYING NEW SILICON.

MAJOR COMPONENTS LOCATION GUIDE



ALIGNMENT INSTRUCTIONS

SHUT DOWN CIRCUIT

When the high voltage rises, a simultaneous voltage increase will develop at terminal 10 of the Horizontal Output Transformer(FB401), and be applied to pin 52 of IC401. If excessive high voltage is produced, the increased voltage developed exceeds the rating of zener diode D405 causing the Horizontal Oscillator to stop functioning and the high voltage system to shut down.

VERTICAL SIZE ADJUSTMENT

Adjust the control (**VR401**) so that the picture fills the picture from top to bottom and is proportionate to the width.

RF AGC ADJUSTMENT

The RF AGC control is adjusted at the factory and rarely requires re-adjustment unless the received picture exhibits too much snow or the receiver lacks sensitivity. Home adjustment can be made by tuning in a weak snowy station and adjusting RF AGC for the least amount of snow. For a more accurate adjustment use the following procedure.

1. Inject a test pattern signal (80dB).
2. Adjust AGC pin of TV tuner (TP206) to 3.0V with **VR201** control.

AFT ADJUSTMENT

1. Connect the output of the oscillator (38.9MHz) to the tuner pack TP.
2. Adjust **L208** to keep constant DC voltage at TP207 with AFT ON and AFT OFF.

FOCUS ADJUSTMENT

Adjust focus control on the flyback transformer for a defined picture.

SUB BRIGHT ADJUSTMENT

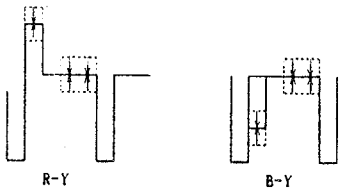
1. Receive the signal of Monochrom pattern.
2. Set the Contrast and Brightness controls to maximum position.
3. Adjust the Sub Bright (**VR603**) control to obtain a dim white pattern on 25% of gray scale.

SUB COLOR ADJUSTMENT

1. Receive the signal of Color Bar pattern.
2. Connect the oscilloscope to TP802.
3. Press the NORMAL SW on the remote control.
4. Adjust the color level to 75% with **VR602.**

HUE DELAY ADJUSTMENT

1. Receive the signal of DEM pattern.
2. Connect dual oscilloscope to TP601 and TP602.
3. Adjust waveform to straight line with **VR601** and **L603.**



STEREO SEPARATION ADJUSTMENT

1. Receive the stereo signal.
2. Connect a digital voltmeter to L-ch Audio output.
3. Adjust output for L-ch to minimum with **VR701.**

H.POSITION ADJUSTMENT

1. Receive the test pattern signal.(PAL Philips)
2. Adjust horizontal picture position to center with **VR402.**

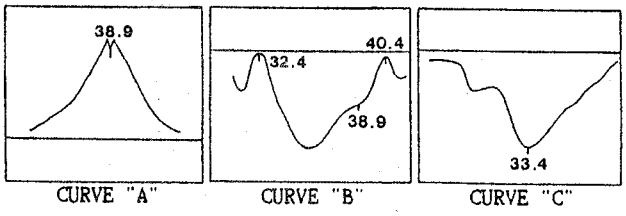
T'TEXT ADJUSTMENT

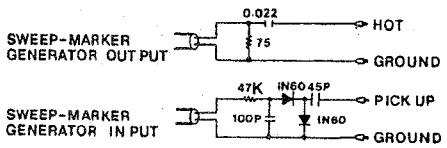
1. Receive the snowy station. (free-run)
2. Connect the frequnency counter to 17pin of IC850.
3. Adjust frequnency counter to 6.001MHz with **TC851.**

VCO, TRAP AND SIF ADJUSTMENT

(Refer to Figure 1)
TEST EQUIPMENT CONNECTION
OSCILLOSCOPE .... Set AC-DC switch to AC position.
SWEEP-MARKER GENERATOR .... Connect H SCOPE and V SCOPE output cable from SWEEP-MARKER GENERATOR to H and V input connectors on the OSCILLOSCOPE, connect hot lead of SWEEP-MARKER OUTPUT cable to test point TP209 on PCB001; connect ground lead to chassis ground. Connect pick up SWEEP-MARKER INPUT cable to TP203; ground lead to chassis ground.

1. Connect 10K ohm variable resistor between TP201, B+ (12V) to ground.
   Install AGC VR to prevent saturation in waveform, then adjust AGC VR for proper size of waveform. On the other hand, in case IF AGC voltage is supplied externally, adjust for proper size of waveform on condition that IF AGC voltage is within 10V and is gradually decreased.
2. Adjust **L201** to obtain maximum amplitude of response curve at 38.9 MHz.
   (Refer to Response Curve "A")
3. Re-connect hot lead of SWEEP-MARKER GENERATOR OUTPUT cable from TP209 to TV tuner TP.
4. Connect SWEEP-MARKER GENERATOR INPUT cable from TP203 to TP208.
5. Adjust **L210** and **L211** abtain maximum amplitude of response curve at 40.4 MHz and 32.4 MHz.
   (Refer to Response Curve "B")
6. Connect SWEEP-MARKER GENERATOR INPUT cable from TP208 to TP301. (With 10K ohm resister)
7. Adjust **L301** and **L302** to obtain maximum amplitude of response curve at 33.4 MHz.
   (Refer to Response Curve "C")





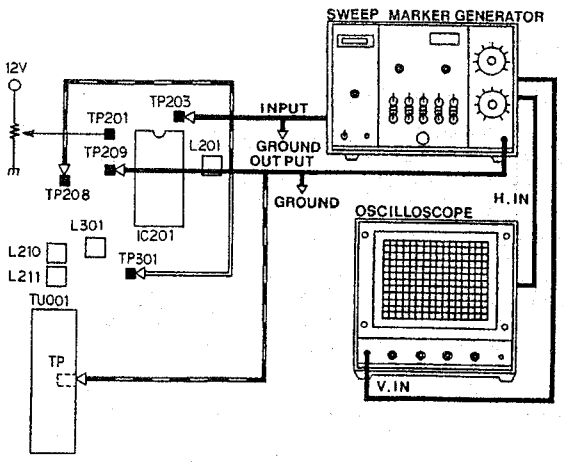
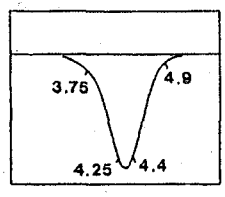


FIGURE 1

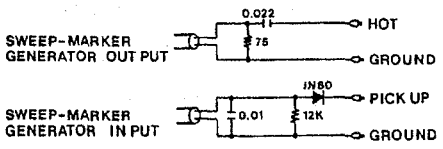
SECAM CHROMA BANDPASS ALIGNMENT

(Refer to Figure 2)
TEST EQUIPMENT CONNECTION
GENERAL ..... PAL-SECAM switch to SECAM position.
SWEEP-MARKER GENERATOR ... Connect H. SCOPE and V. SCOPE output cable from SWEEP-MARKER GENERATOR to H. and V. input connectors on the OSCILLOSCOPE, connect hot lead of SWEEP-MARKER OUTPUT cable to TP on TV tuner; connect ground lead to chassis ground.
Connect pick up lead SWEEP-MARKER INPUT cable to TP604; ground lead to chassis ground.

1. Adjust **L605** to obtain best overall response curve. **(Refer to Response Curve "D")**



CURVE "D"



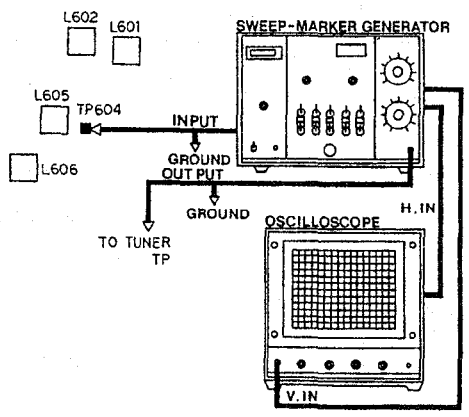


FIGURE 2

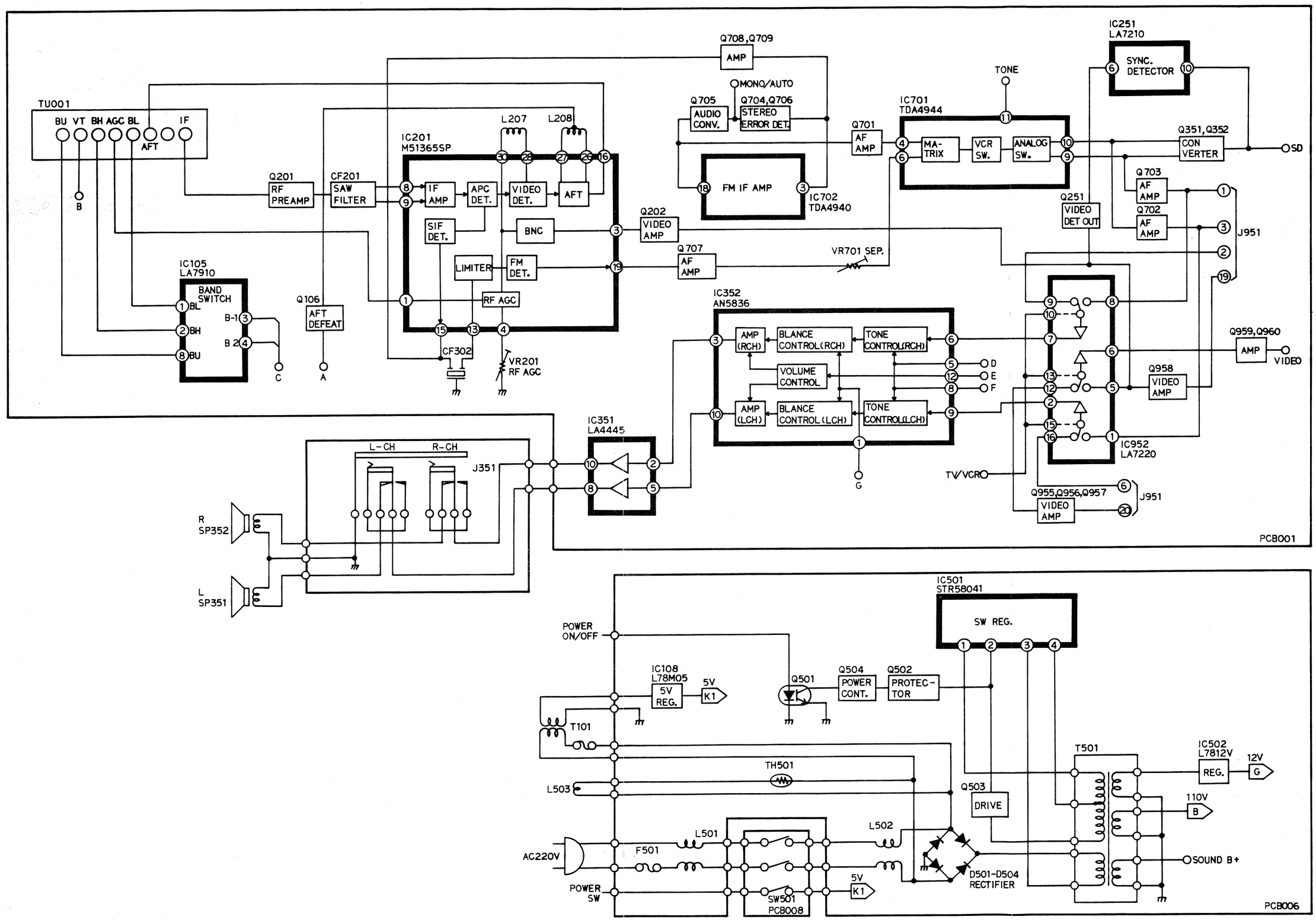
SECAM IDENT ADJUSTMENT

1. Receive the signal of secam color pattern.
2. Connect the oscilloscope to TP603 and ground.
3. Adjust the voltage to maximum with **L606.**

SECAM PHASE ADJUSTMENT

1. Receive the signal of secam color pattern.
2. Adjust **L601** and **L602** not to change the color of the pattern while tuning the Color control from minimum to maximum position.

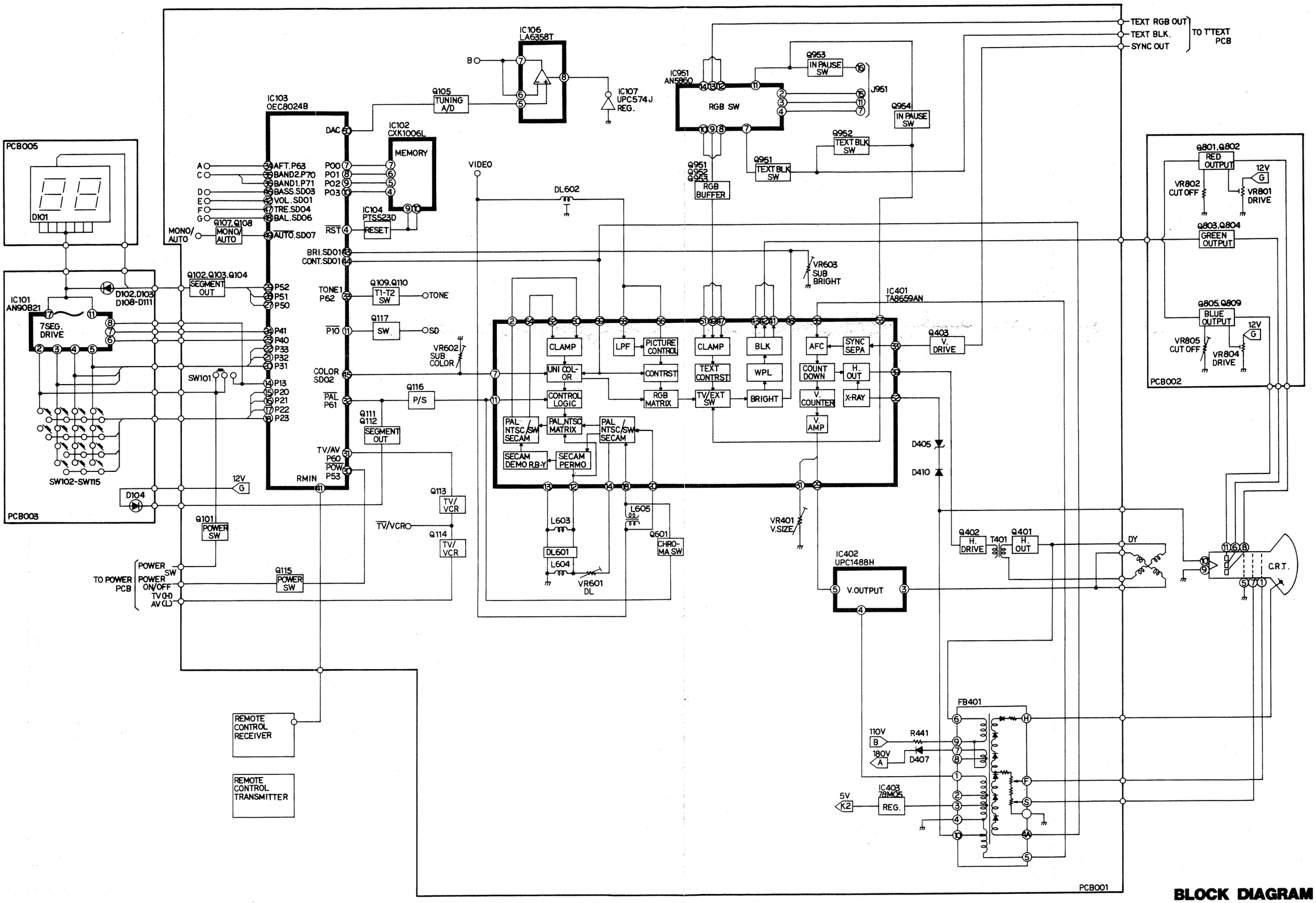
BLOCK DIAGRAM



BLOCK DIAGRAM

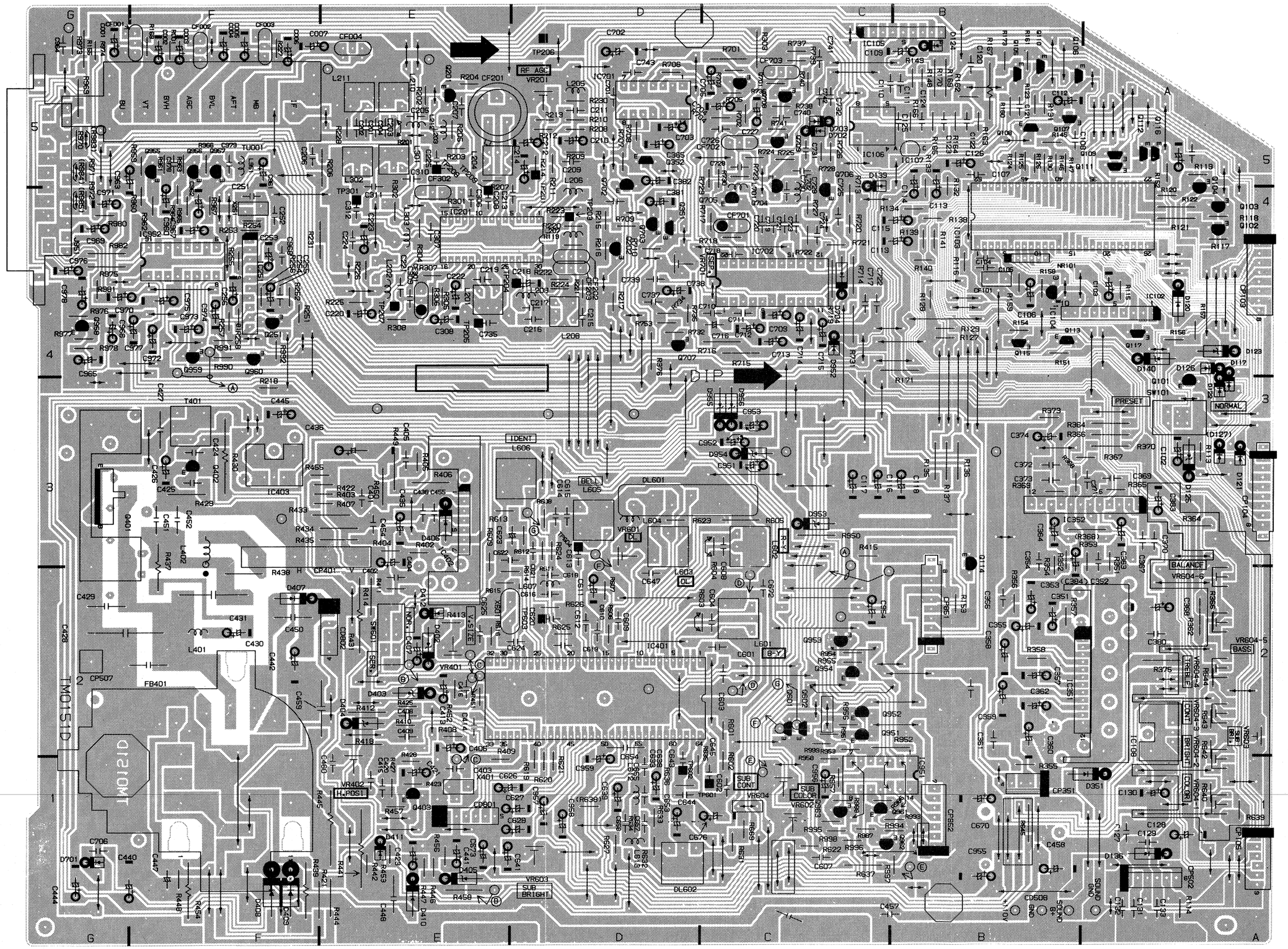
2-3091

BLOCK DIAGRAM

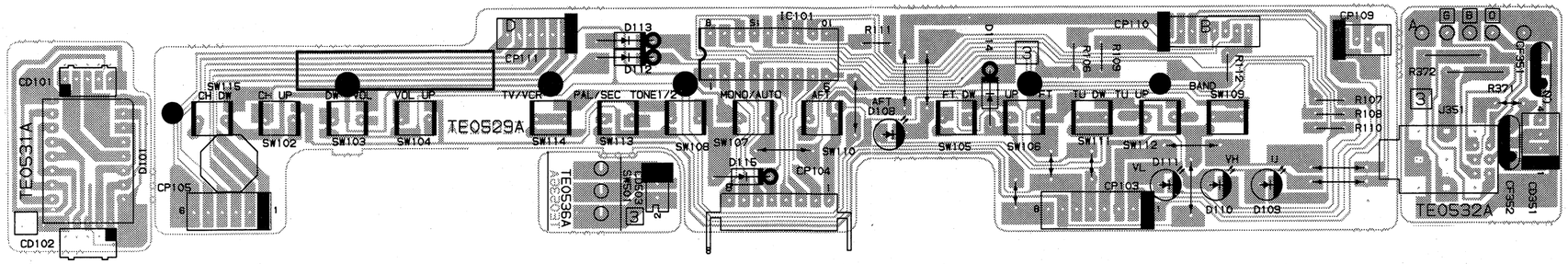


BLOCK DIAGRAM
1-7024

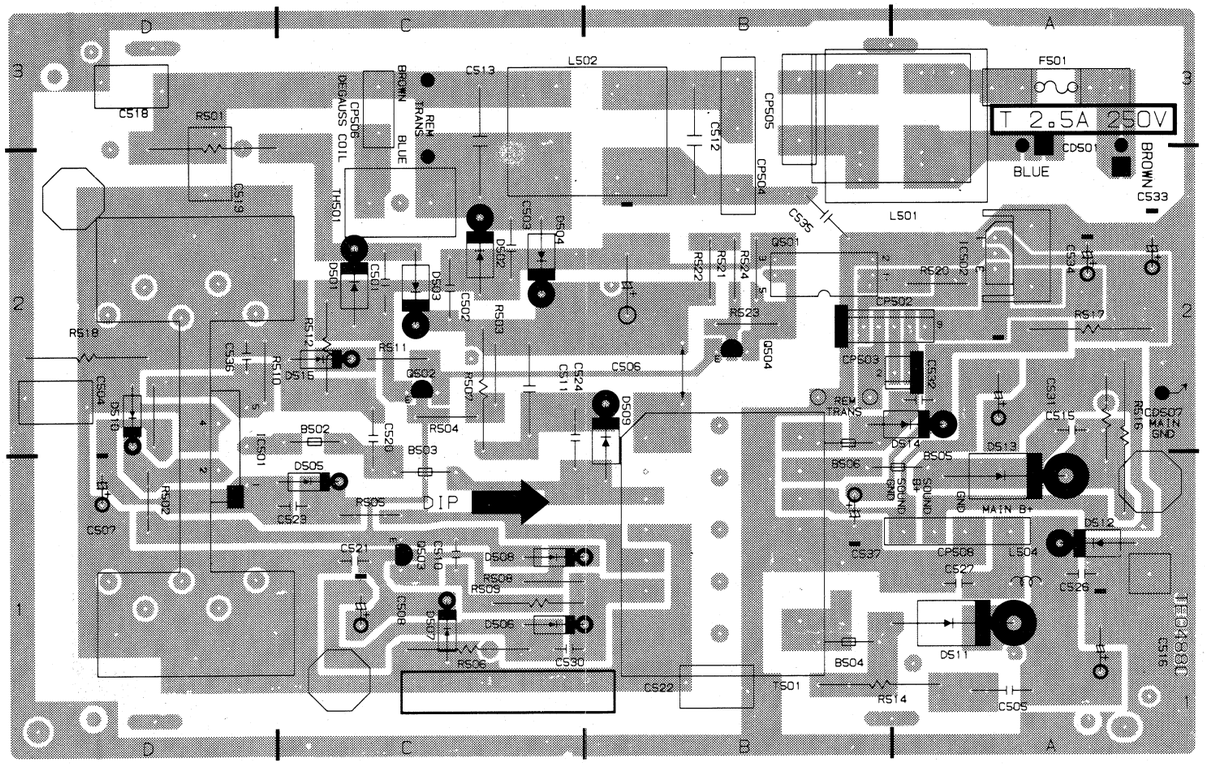
MAIN P.C.BOARD



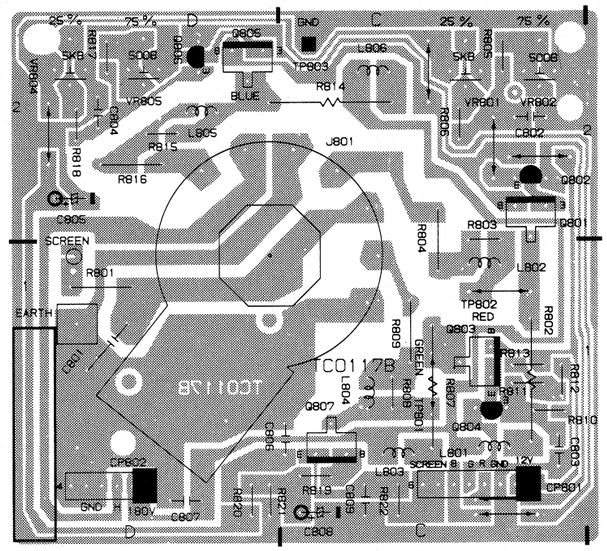
CONTROL/LED/ POWER SWITCH/ HEADPHONE JACK P.C.BOARD



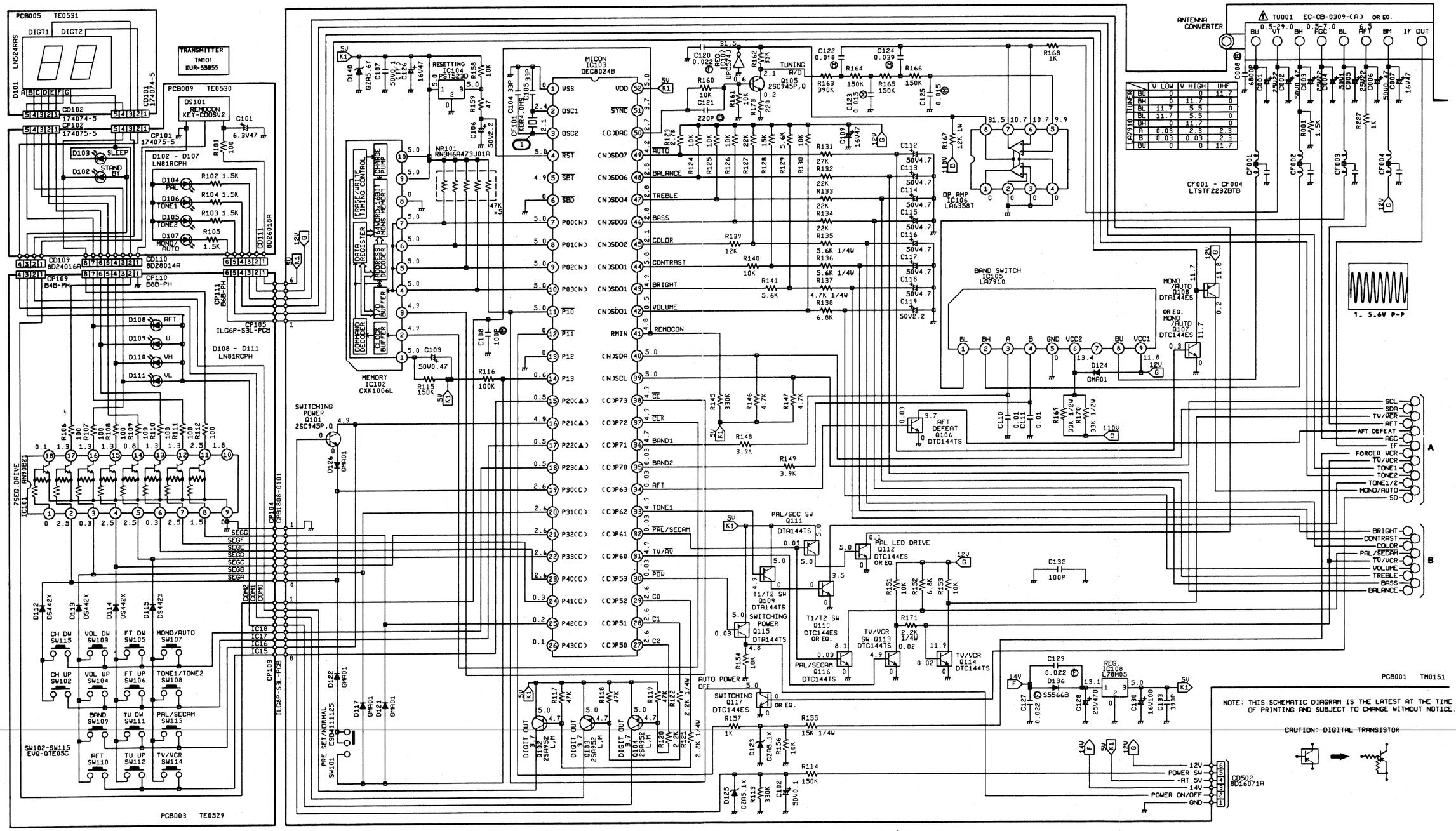
POWER P.C.BOARD



CRT P.C.BOARD



CHASSIS SCHEMATIC DIAGRAM



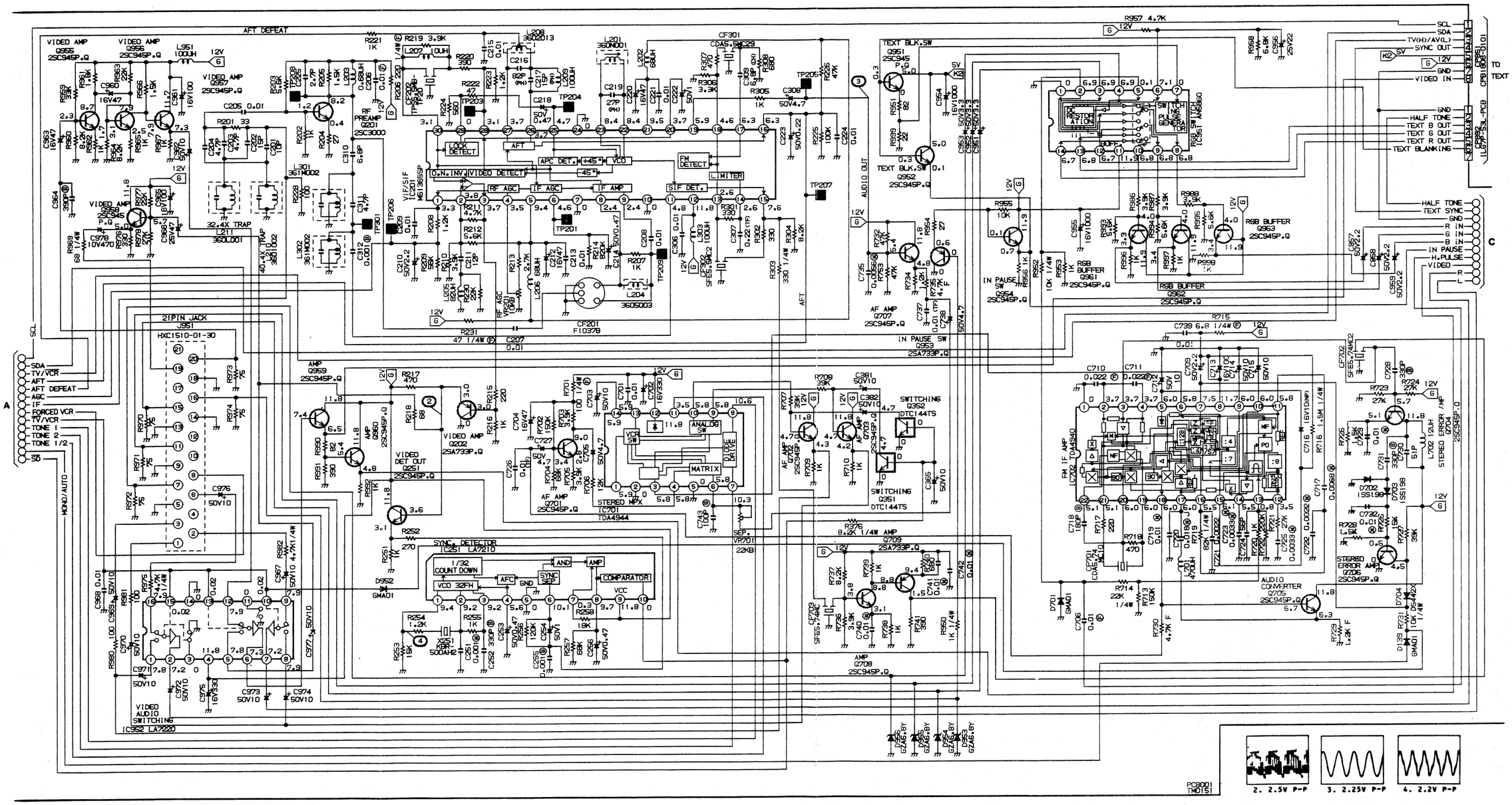
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CHASSIS SCHEMATIC DIAGRAM

1-7805

CHASSIS SCHEMATIC DIAGRAM



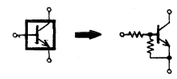
NOTE: F, G, H, I, AND J MARKED AROUND THE PARTS IN THE SCHEMATIC DIAGRAM INDICATES THE FOLLOWING ERROR RATE.
F: ±1%, G: ±2%, H: ±3%, I: ±4%, J: ±5%

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

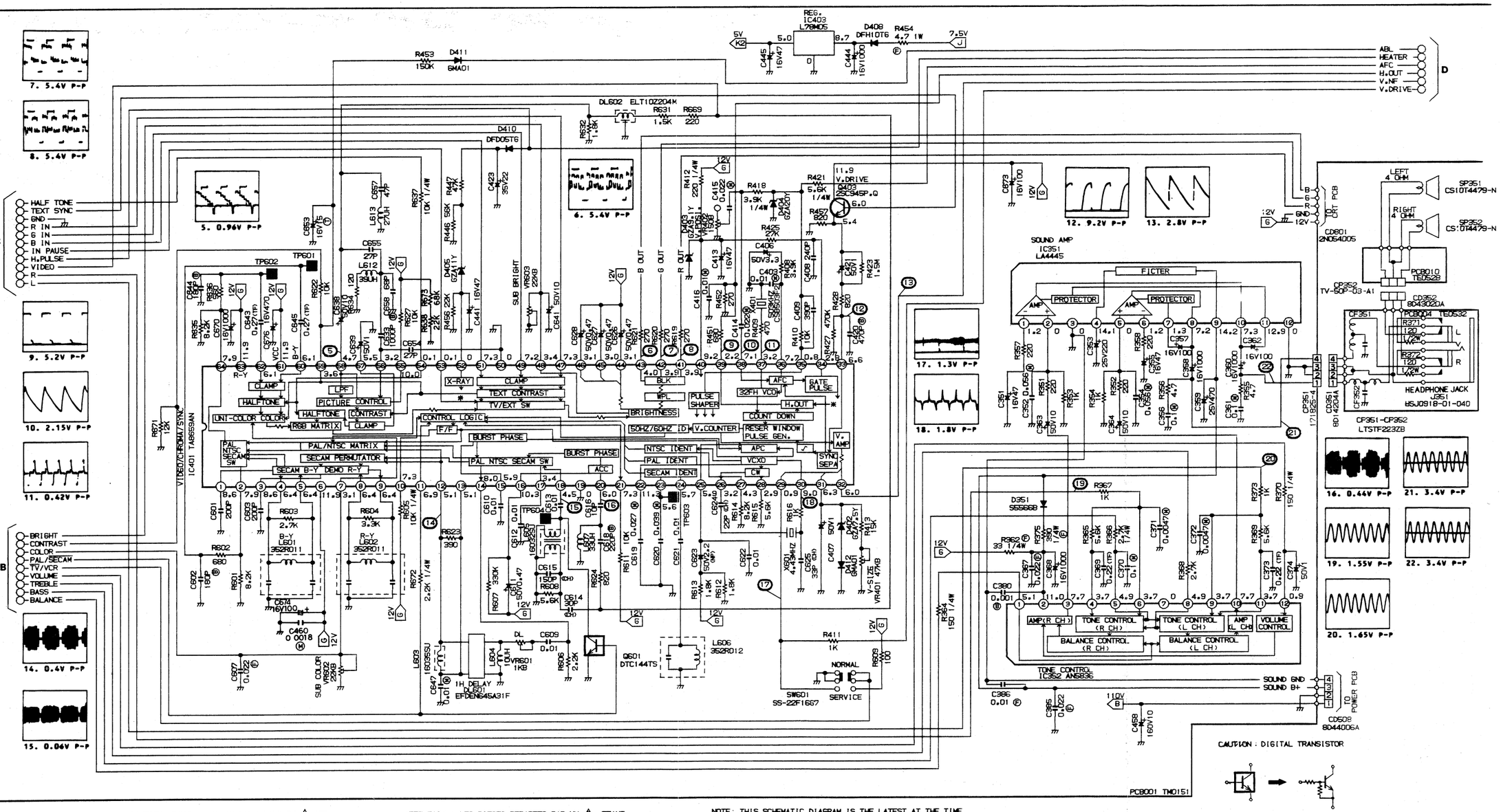
CAUTION: DIGITAL TRANSISTOR



CHASSIS SCHEMATIC DIAGRAM

1-7806

CHASSIS SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY , USE ONES DESCRIBED ON PARTS LIST ONLY.

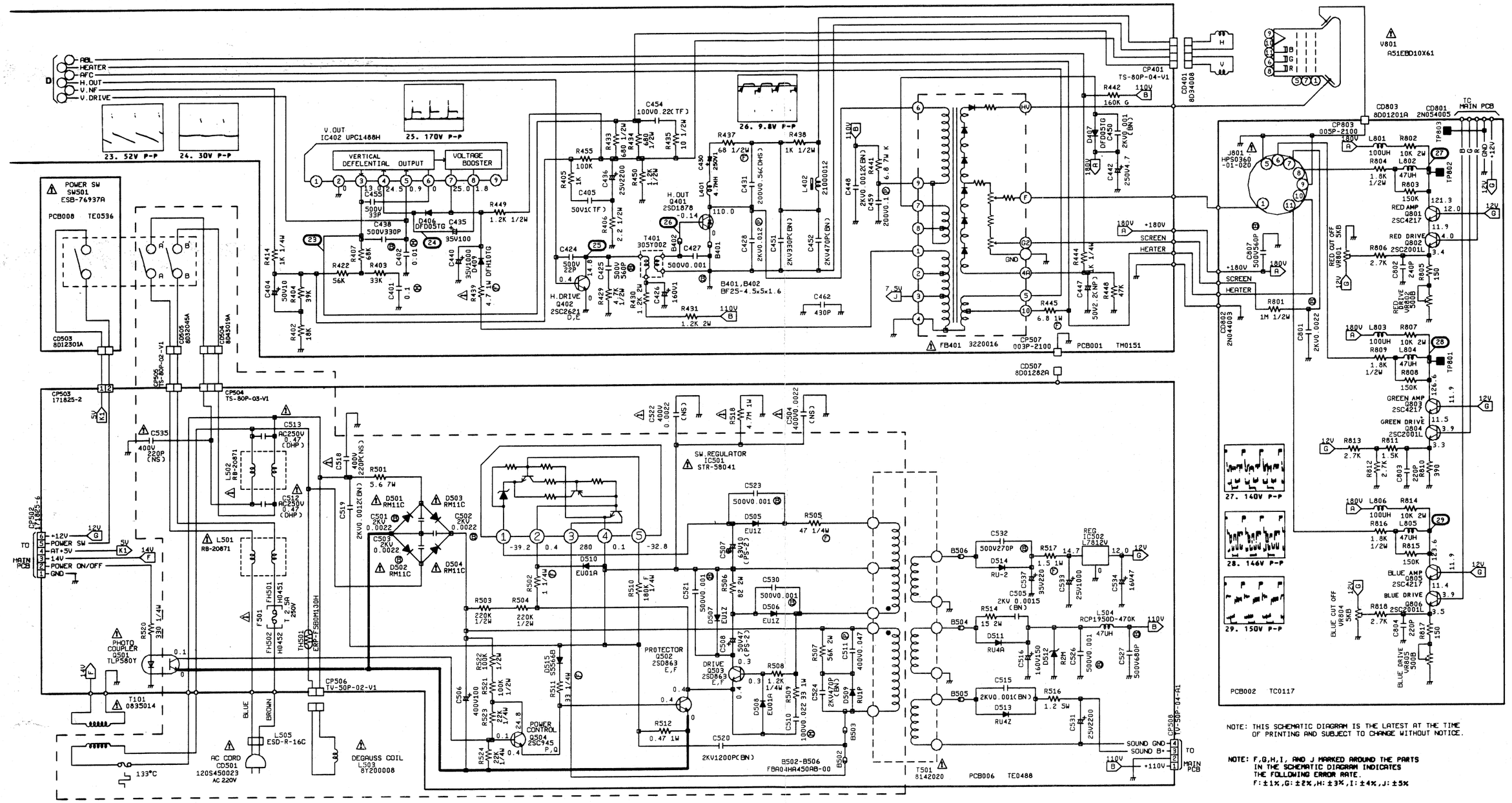
ATTENTION : LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CHASSIS SCHEMATIC DIAGRAM

1-7807

CHASSIS SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

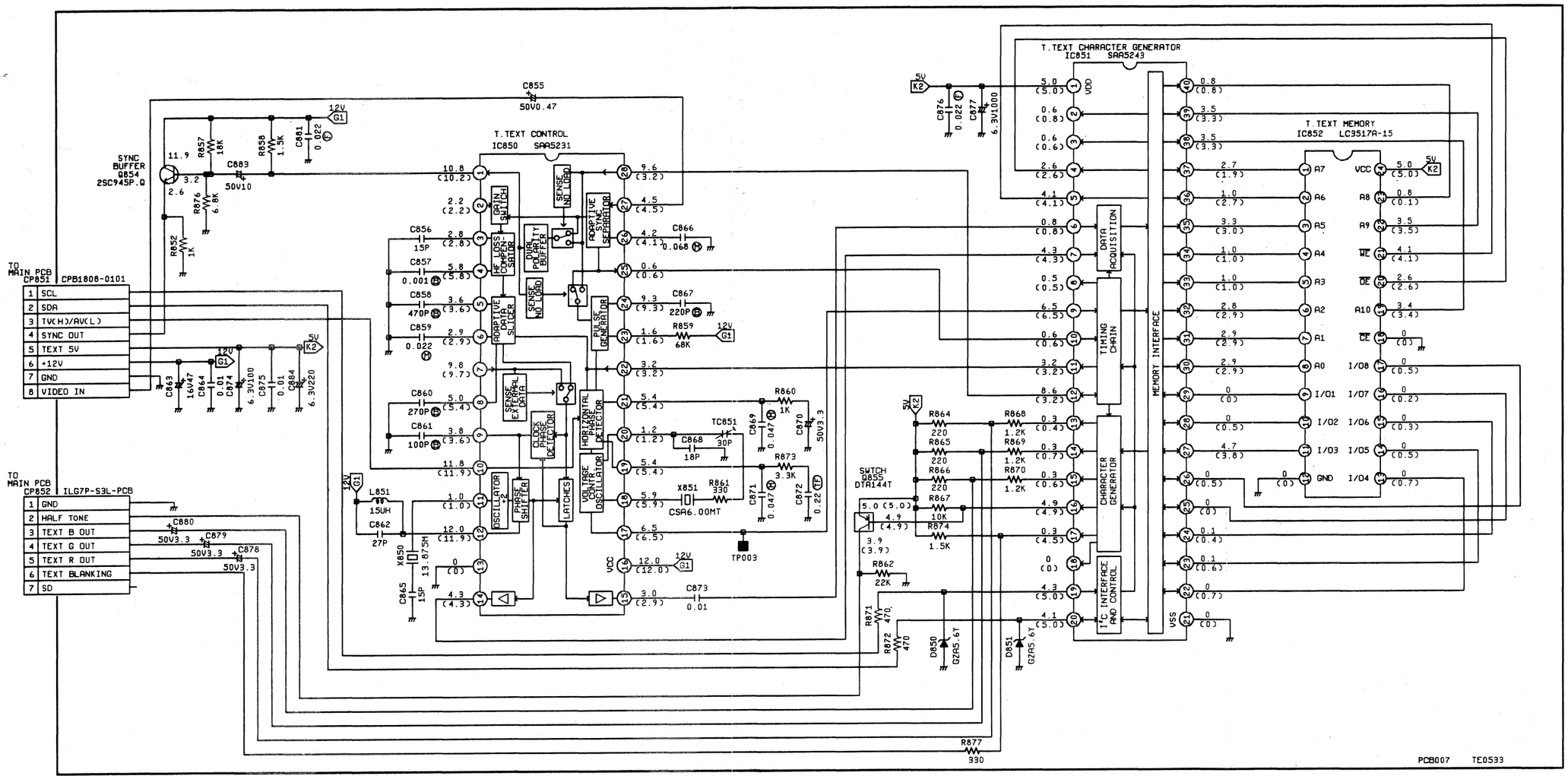
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: F,G,H,I, AND J MARKED AROUND THE PARTS IN THE SCHEMATIC DIAGRAM INDICATES THE FOLLOWING ERROR RATE.
F: ±1%, G: ±2%, H: ±3%, I: ±4%, J: ±5%

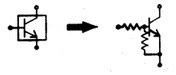
CHASSIS SCHEMATIC DIAGRAM

1-7808

CHASSIS SCHEMATIC DIAGRAM



CAUTION: DIGITAL TRANSISTOR

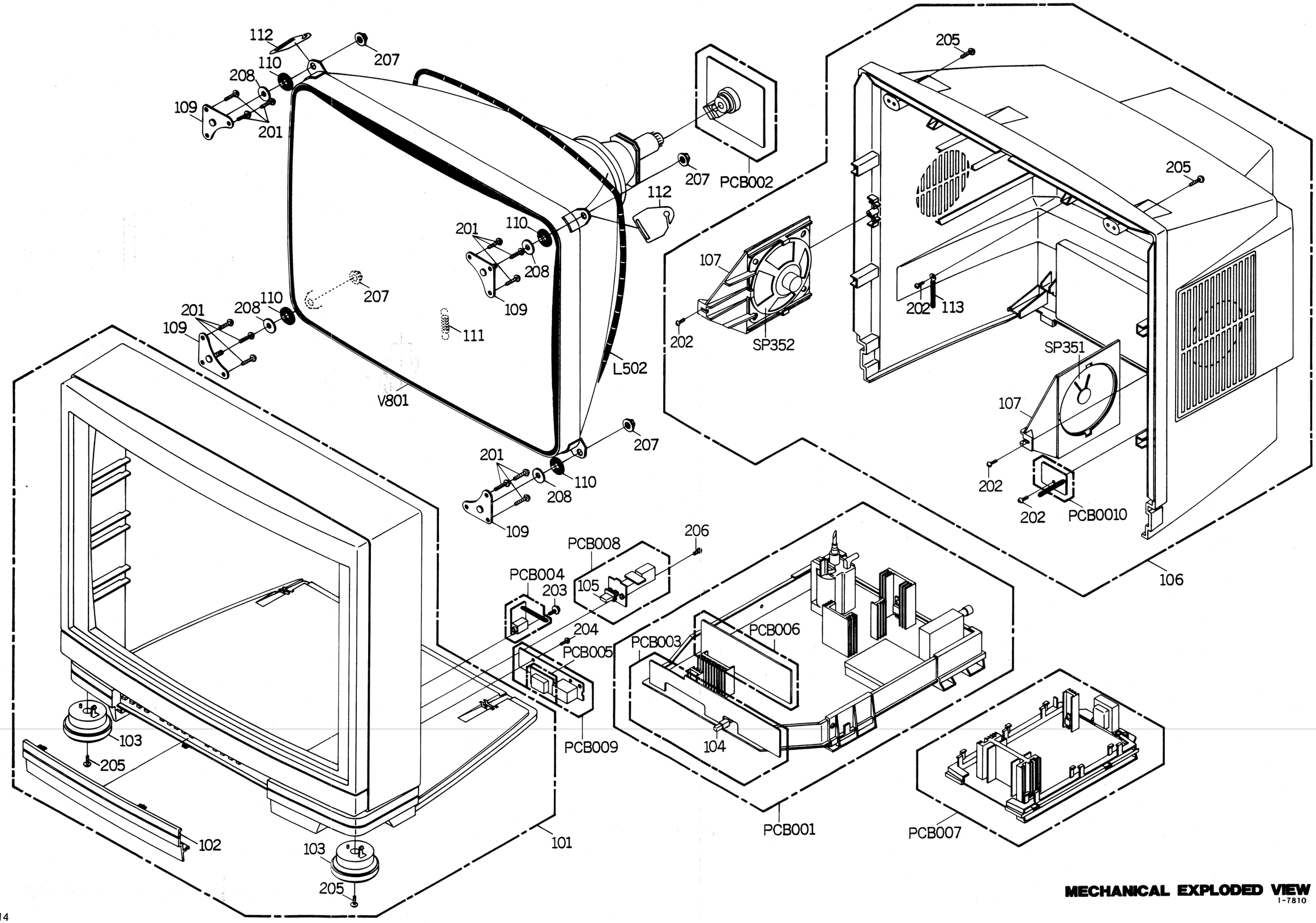


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE FIGURE WITH ( ) IS THE VOLTAGE IN NORMAL TV OPERATION.

THE FIGURE WITHOUT ( ) IS THE VOLTAGE IN TELETEXT OPERETION.

MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW
1-7810

REF.NO	PART NO	DESCRIPTION	
101	A37402A723	CABINET,FRONT ASS'Y	
102	712TPJ0103	DOOR	
103	704TPC0001	FOOT	
104	735TPA0085	BUTTON,PUSH	
105	735TPA0101	BUTTON,POWER	
106	A37402A743	CABINET,BACK ASS'Y	
		SHEET,RATING	
107	709TPA0049	HOLDER,SPEAKER	
109	762TSA0018	ANGLE,CRT	
110	800TR00016	SHEET,CRT SUPPORT	
111	741TUA0003	SPRING,EARTH	
112	751JNA0004	PLATE,EARTH WIRE	
113	899PEC0340	CORD CLAMP NO.PEC-034-0	
201	8110240B04	TAP TITE(P) BIND	4*20 CH
202	8110630A24	TAP TITE(P) BRAZIER	3*12 CH
203	8117E30A04	TAPPING(BO) WH10	3*10 CH
204	8110630804	TAP TITE(P) BRAZIER	3*8 CH
205	8117540A64	TAPPING(BO) TRUSS	4*16 CH
206	8110630A04	TAP TITE(P) BRAZIER	3*10 CH
207	8300560004	SL NUT	M6
208	82A60A8164	PLAIN WASHER	6.3*18*T1.6
---	J3700102A	GUARANTEE CARD	
---	J3700128A	WARNING SHEET	
---	J3740201A	INSTRUCTION BOOK	
---	J3740203A	SCHEMATIC DIAGRAM	
---	792THA0113	PACKAGE,TOP	
---	792THA0114	PACKAGE,BOTTOM	
---	793TCD0642	GIFT BOX	

THIS ELECTRICAL PARTS LIST IS A STANDARD PART LIST, BUT
INTERCHANGEABLE PARTS MAY BE USED IN THE UNIT.
SEE THE INTERCHANGEABLE PARTS LIST AFTER THE STANDARD PARTS LIST.

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART.NO	DESCRIPTION		
		-RESISTORS-		
R167	R3B181123J	R,METAL OXIDE	12K OHM 1 W	
R206	R615U4221J	R,FUSE	220 OHM 1/4W	
R231	R615U4470J	R,FUSE	47 OHM 1/4W	
R362	R615U4330J	R,FUSE	33 OHM 1/4W	
R430	R3B18A122J	R,METAL OXIDE	1.2K OHM 2 W	
R431	R3B18A122J	R,METAL OXIDE	1.2K OHM 2 W	
R437	R61582680J	R,FUSE	68 OHM 1/2W	
⚠ R439	R615814R7J	R,FUSE	4.7 OHM 1 W	
R441	R5A2CE6R8K	R,CEMENT	6.8 OHM 7 W	
R445	R614816R8J	R,FUSE	6.8 OHM 1 W	
R454	R615814R7J	R,FUSE	4.7 OHM 1 W	
R501	R5A2CE5R6K	R,CEMENT	5.6 OHM 7 W	
R502	R63584010J	R,FUSE	1 OHM 1/4W	
R505	R61584470J	R,FUSE	47 OHM 1/4W	
R506	R3B18A820J	R,METAL OXIDE	82 OHM 2 W	
R507	R3B18A563J	R,METAL OXIDE	56K OHM 2 W	
R509	R3B181330J	R,METAL OXIDE	33 OHM 1 W	
R511	R61584330J	R,FUSE	33 OHM 1/4W	
R512	R4B181R47J	R,METAL	0.47 OHM 1 W	
R514	R3B28A150J	R,METAL OXIDE	15 OHM 2 W	
R516	R5A2CD1R2K	R,CEMENT	1.2 OHM 5 W	
R517	R614811R5J	R,FUSE	1.5 OHM 1 W	
⚠ R518	R031G1475J	RC	4.7 MOHM 1 W	
R672	R00104222J	RC	2.2K OHM 1/4W	
R673	R00106683J	RC	68K OHM 1/6W	
R715	R615U46R8J	R,FUSE	6.8 OHM 1/4W	
R802	R3B18A103J	R,METAL OXIDE	10K OHM 2 W	
R807	R3B18A103J	R,METAL OXIDE	10K OHM 2 W	
R814	R3B18A103J	R,METAL OXIDE	10K OHM 2 W	
		-CAPACITORS-		
C008	C0A0B04U3K	CC	6800 PF B	
C206	C0ABF0414Z	CC	0.01 UF F	
C358	E0B7F2102M	CE	1000 UF 16V	
C360	E0B7F2102M	CE	1000 UF 16V	
C368	E0B7F2102M	CE	1000 UF 16V	
C385	C0ABF04H4Z	CC	0.022 UF F	
C386	C0ABF0414Z	CC	0.01 UF F	
C428	P4A2FG123J	CMPP	0.012 UF 2KV	
C431	P4A1F2564J	CMPP	0.56 UF 200V	
C436	E0B7F3222M	CE	2200 UF 25V	
C440	E0B7F4102M	CE	1000 UF 35V	
C444	E0B7F2102M	CE	1000 UF 16V	
C448	C0D4BN7B3K	CC	1200 PF 2KV BN	
C450	C0D4BN713K	CC	1000 PF 2KV BN	
C451	C0D4BN7L2K	CC	330 PF 2KV BN	
C452	C0D4BN7Q2K	CC	470 PF 2KV BN	
C458	E0B50B100M	CE	10 UF 160V	
C459	P3A1F2104J	CPP	0.1 UF 200V	
C460	P1E400182K	CP	0.0018UF 50V	
C462	C0A0SL4P2K	CC	430 PF SL	
C501	C0ABB07H3K	CC	2200 PF 2KV B	
C502	C0ABB07H3K	CC	2200 PF 2KV B	
C503	C0ABB07H3K	CC	2200 PF 2KV B	
⚠ C504	CA1B30KH3M	CC	2200 PF 400V AC	
C505	C0D4BN7E3K	CC	1500 PF 2KV BN	
C506	E53C0H101M	CE	100 UF 400V	
C507	E02QF6100M	CE	10 UF 63V	
C508	E02QF5470M	CE	47 UF 50V	
C511	P341F4473J	CPP	0.047 UF 400V	
⚠ C512	P444FB474M	CMPP	0.47 UF 250V	
⚠ C513	P444FB474M	CMPP	0.47 UF 250V	
C515	C0D4BN713K	CC	1000 PF 2KV BN	
C516	E025FB151M	CE	150 UF 160V	
⚠ C518	CA1B30KH2M	CC	220 PF 400V AC	
C519	C0D4BN7B3K	CC	1200 PF 2KV BN	
C520	C0D4BN7B3K	CC	1200 PF 2KV BN	
⚠ C522	CA1B30KH3M	CC	2200 PF 400V AC	
C524	C0D4BN7Q2K	CC	470 PF 2KV BN	
C531	E0B7F3222M	CE	2200 UF 25V	
C533	E0B7F3102M	CE	1000 UF 25V	
⚠ C535	CA1B30KQ2M	CC	470 PF 400V AC	
C670	E0B7F2102M	CE	1000 UF 16V	
C674	E0B702101M	CE	100 UF 16V	
C801	C0ABB07H3K	CC	2200 PF 2KV B	
C877	E0A1F0102M	CE	1000 UF 6.3V	
C954	E0B7F2102M	CE	1000 UF 16V	
C955	E0B7F2102M	CE	1000 UF 16V	
		-SEMICONDUCTORS-		
D101	0042122003	LED DISPLAY	LN524RAS	
D102	0021120030	LED	LN81RCPH	
D103	0021120030	LED	LN81RCPH	

REF.NO	PART.NO	DESCRIPTION	
		-SEMICONDUCTORS (CONT)-	
D104	0021120030	LED	LN81RCPH
D105	0021120030	LED	LN81RCPH
D106	0021120030	LED	LN81RCPH
D107	0021120030	LED	LN81RCPH
D108	0021120030	LED	LN81RCPH
D109	0021120030	LED	LN81RCPH
D110	0021120030	LED	LN81RCPH
D111	0021120030	LED	LN81RCPH
D112	D13TDS442X	DIODE,SILICON	DS442X-BT
D113	D13TDS442X	DIODE,SILICON	DS442X-BT
D114	D13TDS442X	DIODE,SILICON	DS442X-BT
D115	D13TDS442X	DIODE,SILICON	DS442X-BT
D117	D13TGMA010	DIODE,SILICON	GMA-01-BT
D121	D13TGMA010	DIODE,SILICON	GMA-01-BT
D122	D13TGMA010	DIODE,SILICON	GMA-01-BT
D123	D93T05R10X	DIODE,ZENER	GZA5.1 X BT
D124	D13TGMA010	DIODE,SILICON	GMA-01-BT
D125	D93T05R10X	DIODE,ZENER	GZA5.1 X BT
D126	D13TGMA010	DIODE,SILICON	GMA-01-BT
D136	D25T5566B0	DIODE,RECTIFIER	S5566B
D139	D13TGMA010	DIODE,SILICON	GMA-01-BT
D140	D93T05R60Y	DIODE,ZENER	GZA5.6 Y BT
D351	D25T5566B0	DIODE,RECTIFIER	S5566B
D402	D93T07R50Y	DIODE,ZENER	GZA7.5 Y BT
D403	D93T09R10Y	DIODE,ZENER	GZA9.1 Y BT
D404	D93T02000Y	DIODE,ZENER	GZA20 Y BT
D405	D93T01100Y	DIODE,ZENER	GZA11 Y BT
D406	D23TFD05TG	DIODE,RECTIFIER	DFD05TG-BT
D407	D23TFD05TG	DIODE,RECTIFIER	DFD05TG-BT
D408	D23TFH10TG	DIODE,RECTIFIER	DFH10TG-AT1
D409	D23TFH10TG	DIODE,RECTIFIER	DFH10TG-AT1
D410	D23TFD05TG	DIODE,RECTIFIER	DFD05TG-BT
D411	D13TGMA010	DIODE,SILICON	GMA-01-BT
D412	D13TGMA010	DIODE,SILICON	GMA-01-BT
⚠ D501	D2BTRM11C0	DIODE,RECTIFIER	RM11C
⚠ D502	D2BTRM11C0	DIODE,RECTIFIER	RM11C
⚠ D503	D2BTRM11C0	DIODE,RECTIFIER	RM11C
⚠ D504	D2BTRM11C0	DIODE,RECTIFIER	RM11C
D505	D2BH00EU1Z	DIODE,RECTIFIER	EU1Z
D506	D2BH00EU1Z	DIODE,RECTIFIER	EU1Z
D507	D2BH00EU1Z	DIODE,RECTIFIER	EU1Z
D508	D2BT0EU01A	DIODE,SILICON	EU01AV1
D509	D2B00RU1P0	DIODE,RECTIFIER	RU1P
D510	D2BT0EU01A	DIODE,SILICON	EU01AV1
D511	D2BF0RU4A0	DIODE,SILICON	RU4A
D512	D2B000R2M0	DIODE,AVARANCHE	R2M
D513	D2BJ00RU4Z	DIODE,RECTIFIER	RU4Z
D514	D2BF00RU20	DIODE,SILICON	RU-2
D515	D25T5566B0	DIODE,RECTIFIER	S5566B
D701	D13TGMA010	DIODE,SILICON	GMA-01-BT
D702	D14T0S1980	DIODE,SILICON	1SS198TE
D703	D14T0S1980	DIODE,SILICON	1SS198TE
D704	D13TDS442X	DIODE,SILICON	DS442X-BT
D850	D93T05R60Y	DIODE,ZENER	GZA5.6 Y BT
D851	D93T05R60Y	DIODE,ZENER	GZA5.6 Y BT
D952	D13TGMA010	DIODE,SILICON	GMA-01-BT
D953	D93T06R80Y	DIODE,ZENER	GZA6.8 Y BT
D954	D93T06R80Y	DIODE,ZENER	GZA6.8 Y BT
D955	D93T06R80Y	DIODE,ZENER	GZA6.8 Y BT
D956	D93T06R80Y	DIODE,ZENER	GZA6.8 Y BT
IC101	I01D10B210	IC	AN90B21
IC102	I30S1006L0	IC	CXK1006L
IC103	I51D08024B	IC	OEC8024B
IC104	I0L9TT523D	IC	PST523D
IC105	I03S079100	IC	LA7910
IC106	I03D06358T	IC	LA6358T
IC107	I02190574J	IC	UPC574J-T
IC108	I03B98M050	IC	L78M05-SA
IC201	I06DA365SP	IC	M51365SP
IC251	I03S072100	IC	LA7210
IC351	I03SP44450	IC	LA4445
IC352	I01S058360	IC	AN5836
IC401	I05DE86590	IC	TA8659AN
IC402	I02SD14880	IC	UPC1488H
IC403	I03B98M050	IC	L78M05-SA
⚠ IC501	I2B4980410	IC	STR-58041
IC502	I03B97812V	IC	L7812V-SA
IC701	I0EDF49440	IC	TDA4944
IC702	I0EDF49400	IC	TDA4940
IC850	I9KDF52310	IC	SAA5231

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART.NO	DESCRIPTION	
		-SEMICONDUCTORS (CONT)-	
IC851	14KDF52430	IC	SAA5243
IC852	153D03517C	IC	LC3517A-15
IC951	101D058600	IC	AN5860
IC952	103D072200	IC	LA7220
Q101	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q102	TA2T009520	TRANSISTOR,SILICON	2SA952-T
Q103	TA2T009520	TRANSISTOR,SILICON	2SA952-T
Q104	TA2T009520	TRANSISTOR,SILICON	2SA952-T
Q105	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q106	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q107	TN7TD03001	COMPOUND TRANSISTOR(IC)	DTC144ESTP
Q108	TP7TD03001	COMPOUND TRANSISTOR(IC)	DTA144E S-T
Q109	TP7TD03002	COMPOUND TRANSISTOR(IC)	DTA144TS
Q110	TN7TD03001	COMPOUND TRANSISTOR(IC)	DTC144ESTP
Q111	TP7TD03002	COMPOUND TRANSISTOR(IC)	DTA144TS
Q112	TN7TD03001	COMPOUND TRANSISTOR(IC)	DTC144ESTP
Q113	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q114	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q115	TP7TD03002	COMPOUND TRANSISTOR(IC)	DTA144TS
Q116	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q117	TN7TD03001	COMPOUND TRANSISTOR(IC)	DTC144ESTP
Q201	TC3T030000	TRANSISTOR,SILICON	2SC3000-AA
Q202	TALT007330	TRANSISTOR,SILICON	2SA733(C)-T ALL
Q251	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q351	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q352	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q401	TD3FD18780	TRANSISTOR,SILICON	2SD1878
Q402	TC30026210	TRANSISTOR,SILICON	2SC2621
Q403	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
⚠ Q501	000250003Y	PHOTO COUPLER	TLP580Y
Q502	TD3T008630	TRANSISTOR,SILICON	2SD863-AE
Q503	TD3T008630	TRANSISTOR,SILICON	2SD863-AE
Q504	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q601	TN7TD03002	COMPOUND TRANSISTOR(IC)	DTC144TS
Q701	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q702	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q703	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q704	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q705	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q706	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q707	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q708	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q709	TALT007330	TRANSISTOR,SILICON	2SA733(C)-T ALL
Q801	TC3F042170	TRANSISTOR,SILICON	2SC4217-RAC
Q802	TC2T02001L	TRANSISTOR,SILICON	2SC2001LT
Q803	TC3F042170	TRANSISTOR,SILICON	2SC4217-RAC
Q804	TC2T02001L	TRANSISTOR,SILICON	2SC2001LT
Q805	TC3F042170	TRANSISTOR,SILICON	2SC4217-RAC
Q806	TC2T02001L	TRANSISTOR,SILICON	2SC2001LT
Q854	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q855	TP7TD03002	COMPOUND TRANSISTOR(IC)	DTA144TS
Q951	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q952	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q953	TALT007330	TRANSISTOR,SILICON	2SA733(C)-T ALL
Q954	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q955	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q956	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q957	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q958	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q959	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q960	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q961	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q962	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
Q963	TCLT009450	TRANSISTOR,SILICON	2SC945A(C)-T
		-COILS & TRANSFORMERS-	
L201	03360N001C	COIL,DET	360N001
L202	021Z73680K	COIL EL0606RA-680K	68 UH Q=50
L203	021JA6R68M	COIL LAL02TAR68M	0.68 UH
L204	033605003C	COIL,MATCHING	3605003
L205	021JA6820K	COIL LAL02TA820K	82 UH
L206	021Z73680K	COIL EL0606RA-680K	68 UH Q=50
L207	021JA6100K	COIL LAL02TA100K	10 UH
L208	033602013C	COIL,AFT	3602013
L209	021JA6101K	COIL LAL02TA101K	100 UH
L210	033601002C	COIL,DET	3601002
L211	03360L001C	COIL,TRAP	360L001
L301	03361M002C	COIL,SIF	361M002
L302	03361M002C	COIL,SIF	361M002
L303	021Z73101K	COIL EL0606RA-101K	100 UH Q=45
L401	021679472K	COIL EL0909RR-472K	4.7 MH
L402	0221000012	COIL,LINEARITY	21000012
⚠ L501	0290000001	COIL,LINE FILTER	RB-20871
⚠ L502	0290000001	COIL,LINE FILTER	RB-20871

REF.NO	PART.NO	DESCRIPTION	
		-COILS & TRANSFORMERS (CONT)-	
⚠ L503	028Y200008	COIL,DEGAUSS	8Y200008
L504	02100B470K	COIL RCP1950D-470K	47 UH
L505	02AXA509C1	COIL,LINE FILTER	ESD-R-16C
L601	03352R011C	COIL,CHROMA	352R011
L602	03352R011C	COIL,CHROMA	352R011
L603	03352R007C	COIL,CHROMA	16035SU
L604	021JA6100K	COIL LAL02TA100K	10 UH
L605	03302R001C	COIL,CHROMA	16032SU
L606	03352R012C	COIL,CHROMA	352R012
L607	021JA6330K	COIL LAL02TA330K	33 UH
L612	021JA6390K	COIL LAL02TA390K	39 UH
L613	021JA6270K	COIL LAL02TA270K	27 UH
L701	021Z63471K	COIL EL0606SKI-471K	470 UH Q=45
L702	021JA6120K	COIL LAL02TA120K	12 UH
L801	021Z73101K	COIL EL0606RA-101K	100 UH Q=45
L802	021Z73470K	COIL EL0606RA-470K	47 UH Q=50
L803	021Z73101K	COIL EL0606RA-101K	100 UH Q=45
L804	021Z73470K	COIL EL0606RA-470K	47 UH Q=50
L805	021Z73470K	COIL EL0606RA-470K	47 UH Q=50
L806	021Z73101K	COIL EL0606RA-101K	100 UH Q=45
L851	021Z73150K	COIL EL0606RA-150K	15 UH Q=50
L951	021Z73101K	COIL EL0606RA-101K	100 UH Q=45
⚠ T101	0408350147	TRANSFORMER,POWER AC	0835014
T401	03305Y002C	TRANS.,HORIZONTAL DRIVE	305Y002
⚠ T501	0481420205	CONVERTER TRANSFORMER	8142020
		-JACKS-	
J351	0602131001	JACK,RCA 3.5	HSJ0918-01-040
⚠ J801	0662130007	SOCKET,CRT	HPS0360-01-020
J951	0632100006	SOCKET,21 PIN	HXC1510-01-300
		-SWITCHES- 2	
SW101	0500101016	SWITCH,PUSH	ESB4111125
SW102	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW103	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW104	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW105	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW106	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW107	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW108	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW109	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW110	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW111	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW112	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW113	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW114	0504101T14	SWITCH,TACT	EVQ-QTE05G
SW115	0504101T14	SWITCH,TACT	EVQ-QTE05G
⚠ SW501	0530102008	SWITCH,PUSH	ESB-76937A
SW601	0510B22001	SWITCH,SLIDE	SS-22F16G7
		-VARIABLE RESISTORS-	
VR201	V126314B01	VR,SEMIFIXED	RH0615C14J0F
VR401	V1263Q4B03	VR,SEMIFIXED	RH0624CS4J0A
VR402	V1263E2B01	VR,SEMIFIXED	RH0615CE2J0H
VR601	V126313B01	VR,SEMIFIXED	RH0615C13J0F
VR602	V1263H4B01	VR,SEMIFIXED	RH0615CJ4J0D
VR603	V1263H4B01	VR,SEMIFIXED	RH0615CJ4J0D
VR701	V1263H4B01	VR,SEMIFIXED	RH0615CJ4J0D
VR801	V175C53B01	VR,SEMIFIXED	RVA0911H304-1-502M
VR802	V175C52B01	VR,SEMIFIXED	RVA0911H304-1-501M
VR804	V175C53B03	VR,SEMIFIXED	RVA0911H304-3-502M
VR805	V175C52B03	VR,SEMIFIXED	RVA0911H304-3-501M
		-P.C. BOARDS ASS'Y-	
PCB001	A37402A01AP	PCB ASS'Y	TM0151-P
PCB002	A37402A11A	PCB ASS'Y	TC0117
PCB003	A37402A03A	PCB ASS'Y	TE0529
PCB004	A37402A07A	PCB ASS'Y	TE0532
PCB005	A37402A20A	PCB ASS'Y	TE0531
PCB006	A37402A02A	PCB ASS'Y	TE0488
PCB007	A37402A15A	PCB ASS'Y	TE0533
PCB008	A37402A34A	PCB ASS'Y	TE0536
PCB009	A37402A13A	PCB ASS'Y	TE0530
PCB010	A37402A31A	PCB ASS'Y	TE0528
		-MISCELLANEOUS-	
B401	0246451652	CORE,BEADS	BF25-4.5*5*1.6
B402	0246451652	CORE,BEADS	BF25-4.5*5*1.6
B502	024JT03551	CORE,BEADS	FBA04HA450AB-00
B503	024JT03551	CORE,BEADS	FBA04HA450AB-00
B504	024JT03551	CORE,BEADS	FBA04HA450AB-00
B505	024JT03551	CORE,BEADS	FBA04HA450AB-00

REF.NO	PART.NO	DESCRIPTION	
		-MISCELLANEOUS (CONT)-	
B506	024JT03551	CORE,BEADS	FBA04HA450AB-00
BT101	141T003004	BATTERY,MANGAN	UM-3 1.5V
BT102	141T003004	BATTERY,MANGAN	UM-3 1.5V
CD101	0694250080	CONNECTOR PCB SIDE	174074-5
CD102	0694250080	CONNECTOR PCB SIDE	174074-5
CD109	068D24016A	CORD,CONNECTOR	8D24016A
CD110	068D28014A	CORD,CONNECTOR	8D28014A
CD111	068D26018A	CORD,CONNECTOR	8D26018A
CD112	068D12304A	CORD,CONNECTOR	8D12304A
CD113	068D12303A	CORD,CONNECTOR	8D12303A
CD351	068D14204A	CORD,CONNECTOR	8D14204A
CD352	068D43020A	CORD,CONNECTOR	8D43020A
CD401	068D34008A	CORD,EIS CONNECTOR	8D34008
⚠ CD501	120S450023	CORD,AC	120S450023
CD502	068D16071A	CORD,CONNECTOR	8D16071A
CD503	068D12301A	CORD,CONNECTOR	8D12301A
CD504	068D43019A	CORD,CONNECTOR	8D43019A
CD505	068D32045A	CORD,CONNECTOR	8D32045A
CD507	068D01282A	CORD,CONNECTOR	8D01282A
CD508	068D44006A	CORD,CONNECTOR	8D44006A
CD801	122N054005	CORD,JUMPER	2N054005
CD802	122N044003	CORD,JUMPER	2N044003
CD803	068D01201A	CORD,CONNECTOR	8D01201A
CF001	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF002	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF003	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF004	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF101	10034R0001	CERAMIC,OSCILLATOR	KBR-4.0M
CF201	1027038R95	FILTER,SAW	F1037B
CF202	1012T5R503	FILTER,CERAMIC TRAP	TPS5.5MB-TF20
CF301	101205R503	FILTER,CERAMIC	CDA5.5MC29
CF302	1012005R52	FILTER,CERAMIC	SFE5.5MC2
CF351	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF352	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF701	101225R741	FILTER,CERAMIC DIS.	CDA5R74MC10
CF702	101205R742	FILTER,CERAMIC	SFE5.74MC2
CF703	101205R741	FILTER,CERAMIC	SFE5.74MC
CP101	0694250100	CONNECTOR PCB SIDE	174075-5
CP102	0694250100	CONNECTOR PCB SIDE	174075-5
CP103	069H180209	CONNECTOR PCB SIDE	ILG8P-S3L-PCB-S
CP104	069Q180179	CONNECTOR PCB SIDE	CPB1808-0101
CP105	069H160209	CONNECTOR PCB SIDE	ILG6P-S3L-PCB-S
CP109	069D240119	CONNECTOR PCB SIDE	B 4B-PH
CP110	069D280119	CONNECTOR PCB SIDE	B 8B-PH
CP111	069D260119	CONNECTOR PCB SIDE	B 6B-PH
CP351	0694140019	CONNECTOR PCB SIDE	171825-4
CP352	069D430029	CONNECTOR PCB SIDE	TV-50P-03-A1
CP401	069D340018	CONNECTOR PCB SIDE	TS-80P-04-V1
CP502	0694160019	CONNECTOR PCB SIDE	171825-6
CP503	0694120019	CONNECTOR PCB SIDE	171825-2
CP504	069D330018	CONNECTOR PCB SIDE	TS-80P-03-V1
CP505	069D320018	CONNECTOR PCB SIDE	TS-80P-02-V1
CP506	069D320029	CONNECTOR PCB SIDE	TV-50P-02-V1
CP507	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP508	069D440019	CONNECTOR PCB SIDE	TV-50P-04-A1
CP803	069D010010	CONNECTOR PCB SIDE	005P-2100
CP851	069Q180179	CONNECTOR PCB SIDE	CPB1808-0101
CP852	069H170209	CONNECTOR PCB SIDE	ILG7P-S3L-PCB-S
CV501	12AL10002A	COVER,AC CORD	SB-1235B-U09
DL601	104114R43G	DELAY LINE GLASS	EFDEN645A31F
DL602	103S000402	DELAY LINE	ELT10Z204M
⚠ F501	0808T2R502	FUSE	T 2.5A 250V
⚠ FB401	0432200162	TRANSFORMER,FLYBACK	3220016
FH501	067M0T0004	HOLDER,FUSE	H0451
FH502	067M0T0005	HOLDER,FUSE	H0452
MS501	128B000017	MICA,SHEET	STR-50103MICA
NR101	110E547301	R,NETWORK	RN3H6A473J01
OS101	077M006004	REMOTE RECEIVER	KEY-C00SV2
SP351	070A146004	SPEAKER	CS10T4479-N
SP352	070A146004	SPEAKER	CS10T4479-N
TC851	0100514001	C,CERAMIC TRIMMER	TZ03R300E
TH501	D810M180H0	DEGAUSS ELEMENT	ERP-F5B0M180H
TM101	076100Q003	TRANSMITTER	EUR-53855
⚠ TU001	0145211006	TUNER,UHF-VHF	EC-CB-0309-(A)
⚠ V801	09BE210403	TUBE,CATHODE RAY	A51EBD10X61
X251	1003R50001	CERAMIC,OSCILLATOR	KBR-500AH2
X401	1002R50301	CERAMIC,OSCILLATOR	CSB503F2
X601	10054R4301	CRYSTAL NR-18	4.433619MHZ
X850	100613R801	CRYSTAL	HC49/U 13.875MHZ
X851	10026R0004	SERALOCK	CSA6.00MT

RESISTOR
RC.....CARBON RESISTOR

CAPACITORS
CC.....CERAMIC CAPACITOR
CE.....ALUMI ELECTROLYTIC CAPACITOR
CP.....POLYESTER CAPACITOR
CPP.....POLYPROPYLENE CAPACITOR
CPL.....PLASTIC CAPACITOR
CMP.....METAL POLYESTER CAPACITOR
CMPL.....METAL PLASTIC CAPACITOR
CMPP.....METAL POLYPROPYLENE CAPACITOR
CST.....STYROL CAPACITOR

INTERCHANGEABLE PARTS LIST

NOTE: THE FOLLOWING PART(S)MAY BE SUBSTITUTED FOR PARTS INDICATED IN THE BASIC PART(S) LIST (WITH THE SAME REF.NO.). THESE PARTS SHARE THE SAME ELECTRICAL CHARACTERISTICS AND OTHER ELEMENTS FOR COMMON USAGE. EITHER PART NUMBER MAY BE USED IN THIS UNIT.

REF.NO	DESCRIPTION (PART NO)	DESCRIPTION (PART NO)
Q107	DTC144ESTP (TN7TD03001)	BA1L4M-T (TNLTD03001)
Q110	DTC144ESTP (TN7TD03001)	BA1L4M-T (TNLTD03001)
Q112	DTC144ESTP (TN7TD03001)	BA1L4M-T (TNLTD03001)
Q117	DTC144ESTP (TN7TD03001)	BA1L4M-T (TNLTD03001)

THE PARTS LISTED ARE INTERCHANGEABLE BY ONE COMPLETE BLOCK.

REF.NO	DESCRIPTION (PART NO)	DESCRIPTION (PART NO)
TU001	EC-CB-0309-(A) (0145211006)	EC-CB-0309 (0145211003)
J001		HXC0242-01-110 (0632200019)